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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER

KING, B

ART UNIT	PAPER NUMBER
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3613

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3

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/634,823

Applicant(s)
Perach et al

Examiner
Bradley King

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2 20) ☐ Other:

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DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the top margins are too small. See 37 CFR 1.52b.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 15-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites the step of “selectively disabling said regenerative braking system if said state of charge of said battery is substantially full”. Claim 14 previously recites “selectively disabling said regenerative braking system only if said antiskid braking event is occurring at either of said first pair of wheels.” The meaning of these limitations are unclear as the limitation of dependent claim 15 seems to contradict the limitation of claim 14.

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Claim 16 recites “reducing the ratio of said regenerative braking force to said total braking force.” There is insufficient antecedent basis for “the ratio” and it is unclear what the ratio is reduced from. From the specification, it appears that the ratio does not actively change.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 5, 8-9, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 11-78839.

JP 11-78839 discloses all the limitations of the instant claims including; a braking system with a first portion (28, 40, 42, 46) which selectively provides a regenerative braking function at a first pair of wheels (10, 12), a second portion (46, 58) which is communicatively connected to the first portion and which selectively provides an antiskid braking function at the first and second pair of wheels, the second portion being effective to detect antiskid braking events at each of said wheels, and which communicates a signal to the first portion, effective to selectively disable the regenerative braking function only if an antiskid braking event is detected at either of the first pair of wheels (see column 3, lines 45-50 of US equivalent US 6231134).

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6. Claims 1-3, 5, 8-9, and 12-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kade et al.

Kade et al disclose all the limitations of the instant claims including; a braking system with a first portion (38, 63, 65) which selectively provides a regenerative braking function at a first pair of wheels (14, 16), a second portion (38, 62) which is communicatively connected to the first portion and which selectively provides an antiskid braking function at the first and second pair of wheels, the second portion being effective to detect antiskid braking events at each of said wheels, and which communicates a signal to the first portion, effective to selectively disable the regenerative braking function only if an antiskid braking event (rear wheel in a release mode) is detected at either of the first pair of wheels (see steps 162 and 164 in figure 2b).

Regarding claims 3, 12, and 15, see step 138. The regenerative braking available depends on the state of charge of the battery. When the battery voltage reaches the upper limit, no regenerative braking is available.

Regarding claim 16, Kade et al disclose the reduction of regenerative braking to ensure a smooth transition of the regenerative braking command to zero. See column 4, lines 32-34.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 6-7, and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-78839.

JP 11-78839 discloses all the limitations of the instant claims with exception to the connection of the portions through a CAN bus. CAN buses are well known in the art for data transmission in brake systems. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a CAN bus for the communication between the different modules of JP 11-78839 as an obvious means of communication allowing the transmission of data between the modules.

Regarding claims 7 and 11, JP 11-78839 also lacks an auxiliary bus. Redundant communication buses are well known in the art. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include an auxiliary bus in the brake system of JP 11-78839 to increase the safety of the system.

9. Claims 3-4, 12-13, and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-78839 in view of Kade et al.

JP 11-78839 discloses all the limitations of the instant claims with exception to the explicit disclosure of precluding regenerative braking when the battery is full. JP 11-78839 does

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recognize the need to limit the regenerative braking based on parameters of the electric storage device (see column 18, lines 8-11 of the US equivalent US 6231134), but fails to provide greater detail. Kade et al disclose the determination of regenerative braking based on the charge state of the battery. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to preclude regenerative braking when the battery is at full charge in the system of JP 11-78839 as taught by Kade et al to prevent damage to the battery.

Regarding claim 16, JP 11-78839 lacks the reduction of the ratio of regenerative braking force. Kade et al teach the reduction of regenerative braking force to improve the transition from blended braking to hydraulic braking. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to reduce the regenerative braking ratio as taught by Kade et al to provide a smooth transition when the regenerative braking is zeroed.

Regarding claim 17, JP 11-78839 lacks the ratio of 20% between the regenerative and total braking force. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to determine the optimum ratio which provides both adequate braking and a smooth transition through routine experimentation.

Regarding claim 18, JP 11-78839 lacks the implementation of a CAN bus and an auxiliary bus. CAN buses and redundant communication buses are well known in the art for data transmission in brake systems. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a CAN bus and auxiliary bus for the communication between the different modules of JP 11-78839 as an obvious means of communication allowing

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the transmission of data between the modules and increase the safety of the system through the use of redundant communication paths.

10. Claims 6-7, 10-11 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kade et al.

Kade et al discloses all the limitations of the instant claims with exception to the connection of the portions through a CAN bus. CAN buses are well known in the art for data transmission in brake systems. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a CAN bus for the communication between the different modules of Kade et al as an obvious means of communication allowing the transmission of data between the modules.

Regarding claims 7 and 11, Kade et al also lacks an auxiliary bus. Redundant communication buses are well known in the art. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include an auxiliary bus in the brake system of Kade et al to increase the safety of the system.

Regarding claim 17, Kade et al lacks the specific ratio of 20%. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to determine the optimum ratio which provides both adequate braking and a smooth transition through routine experimentation.

Regarding claim 18, Kade et al lack a CAN bus and an auxiliary bus. CAN buses and redundant communication buses are well known in the art for data transmission in brake systems.


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It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a CAN bus and auxiliary bus for the communication between the different modules of Kade et al as an obvious means of communication allowing the transmission of data between the modules and increase the safety of the system through the use of redundant communication paths.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bower et al, Fukasawa et al (US equivalent to JP 11-78839 relied upon above), Zittlau et al, Feigel et al, Konaga et al, and Patient et al. All show braking systems.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley King whose telephone number is (703)308-8346.


DOUGLAS C. BUTLER
PRIMARY EXAMINER
7/2/01
AU 3613

BTK

July 1, 2001